

REMARKS

Claims 1 – 35 are pending and reconsideration of those claims is requested. The present application claims priority from (under 35 USC 120) and incorporates by reference the subject matter of application serial number 07/872,190 filed April 22, 1992 which has subsequently issued as US patent number 5,334,876. A copy of the '876 patent is attached (Attachment A) for the convenience of the Examiner. The claim for priority from this application was acknowledged on the replacement filing receipt that accompanies this response and is designated Attachment B.

In rejecting the claims in the last office action, the Examiner cited US patent number 5,982,124 to Wang (herein the '124 patent) having an effective date of August 30, 1995. Thus, if applicants can show support for the presently claimed subject matter in the earlier filed application serial number 07/872,190, the April 6, 2006 rejection based on the '124 patent must be withdrawn.

In discussing the requirements of 37 CFR 1.78 (which the USPTO has already decided have been met) the MPEP, section 201.11, states in part that "If the claims in the later –filed application are not entitled to the benefit of an earlier filing date, the examiner should:

(A) notify applicant that the claims in the later filed application are not entitled to the benefit ... and

(B) conduct a prior art search based on the actual filing date of the application instead of the earlier filing date." See page 200-57 October 2005 edition of MPEP.

The April 6, 2006 office action did not include the language of subsection A, but since the '124 patent has an effective date later than this application's first effective filing date (April 22, 1992) , it is assumed the Examiner was operating under subsection B of MPEP 201.11.

A claim chart comparing each of the pending independent claims to the support for the elements of those claims is presented below. Applicants have inserted references in the pending claim text on the left hand column and noted support in the issued '876 patent in the right hand column. Absent a claim that the subject matter

from the '876 patent was inappropriately added by amendment (no such claim was made during original prosecution) the presently pending claims are entitled to the April 22, 1992 claim of priority and the '124 patent cited by the Examiner is not prior art. Since the '124 is the basis of all rejections pending, this application is in condition for allowance.

<p>1. (Original) Apparatus for controlling motion of a motor driven element (1A) in a vehicle over a range of motion (1B) and for altering said motion when undesirable resistance to said motion is encountered (1C), said apparatus comprising:</p> <p style="padding-left: 40px;">a) a sensor (1D) for measuring a parameter of a motor coupled to the motor driven element that varies in response to a resistance to motion during all or part of a range of motion of the motor driven element;</p> <p style="padding-left: 40px;">b) a memory (1E) for storing a number of measurement values from the sensor based on measurements of said parameter over at least a portion of said range of motion;</p> <p style="padding-left: 40px;">c) a controller (1F) coupled to the memory for determining to de-activate the motor based on the measurement values stored in the memory as the motor driven element moves over its range of motion; and</p> <p style="padding-left: 40px;">d) a controller interface (1G) coupled to the motor for altering motion of said motor driven element in response to a determination made by the controller.</p>	<p>1A. window or panel, col 2, line 40</p> <p>1B. range of motion, col 5, lines 60 – col 6, line 9</p> <p>1C. motor de-energized, col 6, line 65 - 66</p> <p>1D. op amp 110, col 5, line 19</p> <p>1E. controller memory, col 6, line 20</p> <p>1F. controller 22, col 2, line 55</p> <p>1G. Field Effect Transistor 20, col 2, line 53</p>
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<p>2. (Original) A method for controlling motion of a motor driven element (2A) in a vehicle over a range of motion (2B) and for altering said motion when undesirable resistance to said motion is encountered (2C) , said method comprising:</p> <p>a) measuring a parameter (2D) of a motor (2E) coupled to the motor driven element that varies in response to a resistance to motion during all or part of a range of motion of the motor driven element (2F) by taking a multiplicity of measurements (2G) as the motor moves the motor driven element over its range of motion;</p> <p>b) storing a number of measurement values (2H) based on measurements of said parameter over at least a portion of said range of motion;</p> <p>c) determining that (2I) the parameter is outside a parameter range based on previous stored measurement values as the motor driven element moves over its range of motion; and</p> <p>d) altering motion of said motor driven element in response to a determination that the parameter is outside the parameter range (2J).</p>	<p>2A. window or panel, col 2, line 40</p> <p>2B. range of motion, col 5, line 60 – col 6, line 9</p> <p>2C. motor de-energized, col 6, line 66</p> <p>2D. voltage drop corresponds to current, col 5, line 15-16</p> <p>2E. motor 12, col 5, line 14</p> <p>2F. current used to sense obstruction, col 6, line 36-40</p> <p>2G. current measured every two millisecs, col 6, line 24</p> <p>2H. FIFO buffer, col 6, line 50</p> <p>2I. comparing sensed with compare value from equation, col 6, line 64</p> <p>2J. stop motor, col 6, line 65</p>
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<p>6. (Original) Apparatus for controlling activation of a motor coupled to a motor vehicle window or panel (6A) for moving said window or panel along a travel path (6B) and de-activating the motor if an obstacle is encountered (6C) by the window or panel, said apparatus comprising:</p> <p style="padding-left: 40px;">a) a sensor (6D) for sensing movement of the window or panel and providing a sensor output signal related to a speed of movement of the window or panel;</p> <p style="padding-left: 40px;">b) a switch (6E) for controllably actuating the motor by providing an energization signal; and</p> <p style="padding-left: 40px;">c) a controller (6F) having an interface coupled to the sensor and the switch for controllably energizing the motor; said controller sensing a collision with an obstruction when power is applied to the controller by:</p> <p style="padding-left: 80px;">i) monitoring movement of the window or panel by monitoring a signal (6G) from the sensor related to the movement of the window or panel;</p> <p style="padding-left: 80px;">ii) identifying a collision (6H) of the window or panel with an obstacle due to a change in the signal from the sensor that is related to a change in movement of the window or panel; and</p> <p style="padding-left: 80px;">iii) outputting a control signal to said switch to deactivate (6I) said motor in response to a sensing of a collision between an obstacle and said window or panel.</p>	<p>6A. window or panel, col 2, line 40</p> <p>6B. range of motion, col 5, line 60 – col 6, line 9</p> <p>6C. motor de-energized, col 6, line 66</p> <p>6D. phase inputs 72, 74 from shaft encoder, col 3, line 44,</p> <p>6E. FET 20, or relay 30, 32, Col 2, line 64,</p> <p>6F. controller 22, col 2, line 55</p> <p>6G. position encoder, col 4, line 16</p> <p>6H. Controller detects an obstruction using rate of speed of motor, col 7, line 33,</p> <p>6I. Motor re-energized, col 4, line 44</p>
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<p>12. (Original) Apparatus for controlling activation of a motor for moving an object along a travel path (12B) and (12A) de-activating the motor if an obstacle is encountered by the object comprising:</p> <ul style="list-style-type: none"> a) a movement sensor for (12C) monitoring movement of the object as the motor moves said object along a travel path; b) a switch for controlling energization of the motor with an energization signal; and c) a controller (12E) including an interface coupled to the switch means for controllably energizing the motor and said interface additionally coupling the controller to the movement sensor for monitoring signals from said movement sensor; said controller comprising a stored program that: <ul style="list-style-type: none"> i) determines motor speed from an (12F) output signal from the movement sensor; ii) calculates an obstacle detect (12G) threshold based on motor speed of movement detected during at least one prior period of motor operation; iii) compares a value based on (12H) currently sensed motor movement with the obstacle detect threshold; and iv) outputs a signal from the interface (12I) to said switch for stopping the motor (12J) if the comparison based on currently sensed motor movement indicates the object has contacted an obstacle. 	<p>12A. Window panel, col 1, line 44</p> <p>12B. Obstacle, col 4, line 44</p> <p>12C. Movement sensor, position encoder, col 4, line 16</p> <p>12D. Switch relay 30, 32, col 2, line 64</p> <p>12E. Controller 22, col 2, line 55</p> <p>12F. Motor speed, rate of change of pulses, col 3, line 59</p> <p>12G. Obstacle detect motor speed, col 7, line 33</p> <p>12H. col 7, line 33</p> <p>12I. Interface, col 4, line 1</p> <p>12J. Stopping motor, braking effect, col 4, line 13</p>
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<p>19. Apparatus for controlling activation of a motor for moving a window or panel (19A) along a travel path (19B) and de-activating the motor if an obstacle is encountered (19C) by the window or panel comprising:</p> <p style="padding-left: 40px;">a) a sensor (19D) for sensing movement of a window or panel along a travel path;</p> <p style="padding-left: 40px;">b) a switch (19E) for controlling energization of the motor with an energization signal; and</p> <p style="padding-left: 40px;">c) a controller (19F) coupled to the switch for controllably energizing the motor and having an interface coupling the controller to the sensor and to the switch; said controller comprising decision making logic for:</p> <p style="padding-left: 80px;">i) monitoring a signal from the sensor;</p> <p style="padding-left: 80px;">ii) calculating an obstacle detect threshold (19G) based on the signal that is detected during at least one prior period of motor operation, or a predetermined threshold;</p> <p style="padding-left: 80px;">iii) comparing (19H) a value based on a currently sensed motor parameter with the obstacle detect threshold; and</p> <p style="padding-left: 80px;">iv) stopping movement (19I) of the window or panel by controlling an output to said switch that controls motor energization if the comparison based on a currently sensed motor parameter indicates the window or panel has contacted an obstacle.</p>	<p>19A , window or panel col 2, line 40</p> <p>19B travel path, col 5, line 60 – col 6, line 9</p> <p>19C de-activating motor, col 6, line 65 - 66</p> <p>19D op amp 110, col 5, line 19</p> <p>19E FET 20, col 2 line 53</p> <p>19F controller 22, col 2 line 55</p> <p>19G equations at col 6, line 33 and col 6 line 62</p> <p>19H comparing, col 6, line 38, col 6, line 65</p> <p>19I, stopping movement, col 6, line 65-66.</p>
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20. (Original) Apparatus for controlling activation of a motor for moving a window or panel (20A) along a travel path (20B) and de-activating the motor if an obstacle is encountered by the window or panel comprising:

a) a sensor (20C) for generating signals representative of the window or panel speed as the motor moves the window or panel along a travel path;

b) an obstacle detection controller (20D) for monitoring at least a part of the travel path of the window or panel for sensing and generating an obstacle detect signal indicating the presence in said travel path of an obstacle to movement of the window or panel;

c) a switch (20E) coupled to said controller for controlling energization of the motor with an energization signal; and

d) said controller including means for processing motor speed and obstacle detection signals (20F) and controlling operation of the motor in response to said speed or obstacle detection signals; said controller including:

i) a storage (20G) for storing a number of speed signals that vary with motor speed;

ii) a processor (20H) for calculating an obstacle detect threshold based on one or more speed signals stored in said storage;

iii) a logic unit for making a comparison between a value representing window or panel speed (20I) based on currently sensed motor speed (20J) with the calculated obstacle detect threshold, a predetermined threshold, and generating a control output based on said comparison; and

iv) an interface (20K) coupled to said switch for changing the state of the switch to stop the motor.

20A. window or panel, col 2, line 40

20B. range of motion, col 5, line 60 – col 6, line 9

20C. encoder, col 4, line 16, col 3, line 44

20D. controller 22, col 2, line 55

20E. FET 20, or relay 30, 32 col 2, line 64

20F. preferred controller is microprocessor having central processing unit, col 2, line 55

20G. microprocessor 22 has storage for storing speed signals shown in Figure 5, col 3, line 59

20H. processor 22

20I. controller outputs controls to ramp up motor speed in controlled fashion col 7, line 30

20J. sensed speed compared with expected based on controlled output, col 7, line 33, 34

20K. controller interfaces with FET 20 or relay, col 2, line 65

<p>28. (New) Apparatus for controlling activation of a motor coupled to a motor vehicle window or panel (A28) for moving said window or panel along a travel path (B28) and de-activating the motor when a predetermined position is encountered (C28) by the window or panel, said apparatus comprising:</p> <p>a) a sensor (D28) for sensing movement of the window or panel and providing a sensor output signal related to a position (E28) of the window or panel;</p> <p>b) a switch for controllably actuating the motor by providing an energization signal (F28) ; and</p> <p>c) a controller (G28) having an interface coupled to the sensor (H28) and the switch for controllably energizing the motor; said controller determines the position of the window or panel when power is applied to the controller by:</p> <p>i) monitoring the position of the window or panel by monitoring the sensor output (I28) signal from the sensor related to the position of the window or panel;</p> <p>ii) identifying the position of the window or panel based on the sensor output signal from the sensor; and</p> <p>iii) outputting a control signal to said switch to deactivate (J28) said motor in response to a sensing of the predetermined position of said window or panel.</p>	<p>A28. window or panel, col 2, line 40</p> <p>B28. path described, col 5, line 60 – col 6, line 9</p> <p>C28. deactivates at home position, col 5, line 65, col 6, line 1</p> <p>D28. hall sensor 132, col 5, line 63, and phase inputs 72, 74 from position encoder, col 3 line 44</p> <p>E28. home position, open position etc col 5, lines 60 – 68, col 6, line 1</p> <p>F28. FET 20, col 2, line 53</p> <p>G28 controller 22, col 2, line 55</p> <p>H28 output from position encoder</p> <p>I28. controller monitors encoder output, col 3, line 44</p> <p>J28. controller stops the roof at the park, full open and vent positions, col 5, lines 59 – col 6, line 9.</p>
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<p>33. (previously presented) Apparatus for controlling activation of a motor for moving a motor driven element in a vehicle (33A) over a range of motion (33B) and de-activating (33C) the motor when undesirable resistance to motion of the element is encountered, the apparatus comprising:</p> <p>a) a sensor (33D) for sensing a speed of the motor and generating an output signal representative of a speed of the motor, a speed of the motor changing when undesirable resistance to motion of the element is encountered;</p> <p>b) a switch (33E) for controlling activation of the motor; and</p> <p>c) a controller (33F) coupled to the sensor and the switch, the controller receiving the sensor output signal from the sensor and outputting a control signal to the switch to de-activate the motor if the sensor output signal indicates that the element has encountered undesirable resistance to motion.</p>	<p>33A, window or panel, col 2, line 40</p> <p>33B, range of motion, col 5, line 60 – col 6, line 9</p> <p>33C, de-activating motor, col 6, lines 65-66</p> <p>33D, shaft encoder, col 3, line 44</p> <p>33E, FET 20, col 2, line 53</p> <p>33F, controller 22, col 2, line 55</p>
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All claims are believed to be in condition for allowance and prompt issuance of a Notice of Allowance is respectfully requested.

Date: May 31, 2006

Respectfully submitted,



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Encls

Attachment A, US pat no. 5,334,876

Attachment B, copy of replacement filing receipt acknowledging claim for priority



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Applicant(s)

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Assignment For Published Patent Application

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Domestic Priority data as claimed by applicant

This application is a DIV of 10/100,892 03/18/2002
 which is a CIP of 09/562,986 05/01/2000 PAT 6,404,158
 which is a CIP of 08/736,786 10/25/1996 PAT 6,064,165
 which is a CON of 08/275,107 07/14/1994 ABN
 which is a CIP of 07/872,190 04/22/1992 PAT 5,334,876

Foreign Applications

If Required, Foreign Filing License Granted: 06/15/2004

The country code and number of your priority application, to be used for filing abroad under the Paris Convention, is **US10/765,487**

Projected Publication Date: Not Applicable

Non-Publication Request: No

Early Publication Request: No

**** SMALL ENTITY ****

Title

Collision monitoring system

Preliminary Class

318

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